SHEVCHENKO, V.F.

Manufacturing round supply vents with screens. Rats. i izobr. predl. v stroi. no.3:105-108 '57. (MIRA 11:1)
(Factories--Heating and ventilation)

SERDYUKOV, I.A., gornyy inzhener; SHEVCHENKO, V.F., gornyy inzh.;
GRIGOR'YEV, V.L., gornyy inzh.

Results of the testing of metal girders in roof caving without batter stulls. Ugol' Ukr. 5 no.11:17-18 N '61. (MIRA 14:11)
(Mine timbering)

GRIGOR'YEV, V.L., gornyy inzh.; SHEVCHENKO, V.F., gornyy inzh.;
STAKHANOV, A.I., gornyy inzh.

Application of the method of roof caving without the use of battery stulls in the Donets Basin mines. Ugol' Ukr. 6 no.2:14-16 F '62. (MIRA 15:2)
(Donets Basin--Mine timbering)

STAKHANOV, A.I., inzh.; GRIGOR'YEV, V.L., kand.tekhn.nauk, starshiy nauchnyy sotrudnik; SHEVCHENKO, V.F., inzh., starshiy nauchnyy sotrudnik

Longwall mining with roof caving on stope timber. Bezop.truda v prom. 6 no.6:26-27 Je '62. (MIRA 15:11)

1. Nachal'nik Upravleniya Luganskogo okruga Komiteta po nadzoru za bezopasnym vedeniyem rabot v promyshlennosti i gornomu nadzoru pri Sovete Ministrov UkrSSR (for Stakhanov). 2. Institut gornogo dela im. A.A.Skochinskogo (for Grigor'yev). 3. UkrNIIGidrougol' (for Shevchenko).
(Donets Basin--Coal mines and mining)

SHEVCHENKO, V.E., inzh.; SERDYUKOV, [illegible], kand.

Factors influencing roof stability during hydraulic mining of the seam. Ugol' Ukr. 7 no.[illegible] [illegible]. (MIRA 17:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut gidrodobychi uglya.

L 05827-67 EWT(m) IJP(c)

ACC NR: AT6031329 SOURCE CODE: UR/3163/66/000/007/0016/0022

AUTHOR: Vasil'yev, R. D.; Dorofeyev, G. A.; Petrov, V. I.; Pimenov, M. I.; Shevchenko, V. F.

34
44 1

ORG: none

19

TITLE: Calibration of radiometers of thermal neutrons in a diffused stream

SOURCE: Soyuznyy nauchno-issledovatel'skiy institut priborostroyeniya. Doklady, no. 7, 1966. Graduirovka radiometrov teplovykh neytronov v diffuznom potoke, 16-21

TOPIC TAGS: radiometer, thermal neutron/RUP-1 radiometer

25

ABSTRACT: A method is described for calibrating RUP-1 radiometers with a minimum of 10% accuracy. Results of calibration of thermal neutrons in a diffuse field and in a directed stream were compared. It was found that radiometers calibrated in a directed stream showed a reduced magnitude during measurements in a diffuse field. As a rule, diffuse fields occur in real conditions, therefore, readings of radiometers calibrated in a directed stream must be increased during

Card 1/2 UDC: 539.1.075.2:539.1.089.6:539.125.5

L 05826-67 EWT(m) IJP(c)

ACC NR: AT6031330 SOURCE CODE: UR/3163/66/000/008/0022/0025

AUTHOR: Vasil'yer, R. D.; Dorofeyev, G. A.; Petrov, V. I.; Pimenov, M. I.; Shevchenko, V. F. 35 B+1

TITLE: The method of similarity of radiation fields used in the adjustment of neutron radiometers 19

SOURCE: Soyuznyy nauchno-issledovatel'skiy institut priborostroyeniya. Doklady, no. 8, 1966. Primeneniye metoda podobiya radiatsionnykh poley pri nastroyke neytronnykh radiometrov, 22-25

TOPIC TAGS: radiometer, gamma radiation, neutron flux density, all wave counter/RUP-1 radiometer, KPN-1 radiometer, KDUS-1M radiometer

ABSTRACT: A method is described for adjusting radiometers by using the similarity of radiation fields produced by neutron sources. The methods were tested with an all-wave counter and RUP-1, KPN-1, and KDUS-1M radiometers. The discrimination threshold in all instruments was set up so as to make it possible to discount the effect of gamma radiation. The results of the adjustment of neutron radiometers by the method of similarity of the radiation fields were compared with the results of the calibration of the same subrange. In all cases, the results of the

UDC: 539.1.075.2:539.125.5

Card 1/2

L 05826-67
ACC NR: AT6031330

adjustment and the calibration coincided within the limits of measurement error. The economic advantage of the method of similarity for the adjustment of radiometers is evident. In this case, the limits of radiometer calibration extend two or three times, the measurement time is reduced, and working conditions are safer from radiation. This compensates for the small decrease in the accuracy of the determination of neutron flux density with radiometers adjusted by the similarity method.

SUB CODE: 20, 18/ SUBM DATE: 05Jan66/

kh

Card 2/2

L 37[illegible]-67 EWT(m)

ACC NR: AT6031327 SOURCE CODE: UR/3163/66/000/003/0022/0025

AUTHOR: Vasil'yev, R. D.; Dorofeyev, G. A.; Petrov, V. I.; Pimenov, M. I.; Shevchenko, V. F.

ORG: none

TITLE: On the problem of using nuclear reactions to calibrate radiometers of fast neutrons

SOURCE: Soyuznyy nauchno-issledovatel'skiy institut priborostroyeniya. Doklady, no. 3, 1966. K voprosu ob ispol'zovanii yadernykh reaktsiy Deyteriy (deyton, neytron) Geliy tri i Tritiy (deyton, neytron) Geliy chetyry dlya graduirovki radiometrov bystrykh neytronov, 22-25

TOPIC TAGS: radiometer, nuclear reaction, neutron, neutron detector, neutron flux/NG-200 generator

ABSTRACT: A study is made of the calibration of neutron radiometers with energies close to 2.5 and 14 Mev, formed during nuclear reactions $D(d,n)He^3$ and $T(d,n)He^4$ respectively. A neutron NG-200 generator was used as the accelerator. It was found that in some cases, neutrons from reaction

Card 1/2 UDC: 539.1.075.2.089:539.172.4

L 07957-67 EWT(m)

ACC NR: AT6031328 SOURCE CODE: UR/3163/66/000/004/0026/0033

AUTHOR: Vasil'yev, R. D.; Dorofeyev, G. A.; Petrov, V. I.; Pimenov, M. I.; Shevchenko, V. F.

ORG: none

27
19
B+1

TITLE: Determination of the yield of nuclear reactions in thick targets with energies up to 100 Kev

SOURCE: Soyuznyy nauchno-issledovatel'skiy institut priborostroyeniya. Doklady, no. 4, 1966. Opredeleniye vykhoda reaktsiy Deyteriy (deyton, neytron) Geliy tri i Tritiy (deyton, neytron) Geliy chetyry v tolstykh mishenyakh pri energiyakh

TOPIC TAGS: nuclear reaction, neutron, deuteron, neutron flux, all-wave counter/NG-200 cascade accelerator

ABSTRACT: On the basis of previous works, a determination is made of the yield of nuclear reactions $D(d,n)He^3$ and $T(d,n)He^4$ in commercially produced thick targets along accompanying particles at deuteron energies up to 100 Kev. The neutron yield was measured with an NG-200 cascade accelerator. Confirmation was made of the virtual absence of scattering in target nuclei Ne^3

Card 1/2 UDC: 539.17

ACC NR: AT6031328 O

escaping toward the counter. Results of the calibration of the all-wave counter confirm the corrections of the method used to determine the neutron flux density and the yield of the reactions $D(d,n)He^3$ and $T(d,n)He^4$. Orig. art. has: 4 figures and 11 formulas.

SUB CODE: 20, 18/ SUBM DATE: 20Oct65/ ORIG REF: 001/ OTH REF: 006/

Card 2/2 egh

ACC NR: AP6022207 SOURCE CODE: UR/0115/66/000/005/0063/0065

AUTHOR: Vasil'yev, R. D.; Dorofeyev, G. A.; Petrov, V. I.; Pimenov, M. I.; Shevchenko, V. F.

ORG: none

TITLE: Calibrating thermal-neutron radiometers in diffused flux

SOURCE: Izmeritel'naya tekhnika, no. 5, 1966, 63-65

TOPIC TAGS: radiometer, thermal neutron

ABSTRACT: The possibility of using a graphite moderator as a source of thermal neutrons for calibrating neutron radiometers was explored. A fast-neutron source ($T(d,n)He^4$ reaction) was placed inside a cavity in the graphite. With thick industrial ZrT and TiT targets, the neutron yield reached 10^9 per sec, at 100 kv and 100 μamp in the cascade accelerator. Theoretically, Q/P = 7000 per cm^2; experimentally, 5600 per cm^2; here, Q - yield of fast neutrons, P - thermal-neutron flux density. Hence, a field of thermal neutrons with a density of 10^6 neutr/sec.cm^2 was feasible; these neutrons had a Maxwellian energy distribution and a temperature of 293K. The technique of calibration of Soviet-made RUP-1 radiometer is described in some detail. The radiometer calibrated in a directional flux showed readings by 30% lower than true value of measurand when used in diffused fluxes. Orig. art. has: 7 formulas.

SUB CODE: 18 / SUBM DATE: none / ORIG REF: 005 / OTH REF: 001

UDC:621.039.564.2

Card 1/1

SHEVCHENKO, V.G.

Life cycle of the alder gall mite Eriophyes (s.str.) laevis (Nalepa, 1891) Nalepa, 1898 (Acariformes, Tetrapodili) [with summary in English]. Ent. oboz. 36 no.3:598-618 '57. (MLRA 10:9)

1. Zoologicheskiy institut Akademii nauk SSSR, Leningrad.
(Mites) (Alder--Diseases and pests)

SHEVCHENKO, V.G.

Regularities of the arrangement of injuries produced by quadrupedal mites on plant leaves [with summary in English]. Paraz. sbor. 18: 129-162 '58. (MIRA 12:3)

1.Zoologicheskiy institut AN SSSR.
(Galls-(Botany)) (Mites)

SHEVCHENKO, V. G., Candidate of Biol Sci (diss) -- "Ecological-morphological investigation of the alder-gall tick -- Eriophues laevis (Nalepa, 1889)". Leningrad, 1959. 19 pp (Acad Sci USSR, Zool Inst), 150 copies (KL, No 20, 1959, 111)

SHEVCHENKO, V. G.

"Special Features of Annual Shoots of Woody Plants as Habitats for Tetrapodic Mites (Acariformes, Tetrapodili)."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Zoological Institute, USSR Academy of Sciences (Leningrad)

SHEVCHENKO, V.G., kand. biolog. nauk

Tetrapod mites. Zashch. rast. ot vred. i bol. 9 no.8:
31-33 '64. (MIRA 17:12)

1. Vsesoyuznyy institut zashchity rasteniy.

56-6-10/56

AUTHOR CHUVILO, I.V., SHEVCHENKO, V.G.

TITLE Angular and Energy Distributions of Protons Produced in the photo-disintegration of Be^9 and C^{12}. (Uglovyye i energeticheskiye raspredeleniya protonov, obrazuyushchikhsya pri fotorasshchplenii Be^9 i C^{12} -Russian)

PERIODICAL Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol 32, Nr 6, pp 1335-1339 (U.S.S.R.)

ABSTRACT THese photoprotons were produced on the occasion of the photodisintegration of C^{12} by a bremsstrahlung with $E_{\gamma max}$=64 and 84 MeV and the photodisintegration of Be^9 by a bremsstrahlung with $E_{\gamma max}$= = 68 and 84 MeV.As a source for the γ-radiation the synchrotron of the Physical Institute of the Academy of Science of the U.S.S.R. with a maximum energy of 265 MeV was used.The scheme of the experiment is shown in form of a diagram.The photon bundle passed through a collimator with a 0,5 x 3 cm opening.The target was located in a vacuum chamber under an angle of 30^0 to the direction of the γ-bundle. The protons were recorded by means of NIKFI photoplates with emulsions of the Ya-2-type (thickness 500μ).These plates were arranged in the chamber under different angles with respect to the direction of the γ-bundle.When looking through the plates those traces were selected which begin on the surface of emission and correspond to protons with an energy of $\geqslant$ 4 MeV.The energy of these protons was determined from the curve range energy.The angular distributions of the photoprotons thus obtained are shown in form of

Card 1/2

SHEVCHENKO, V.G., Cand Phys Math Sci — (diss) "Angular and ~~power engineering~~ energy distributions of photoprotons forming in the photosplitting of Li^6, Be^9 and C^{12} ~~with~~ by spectra of γ -radiation with maximum energies up to 84 ~~m.e.v.~~ Mev." Mos 1958, 8 pp. (Mos Order of Lenin State Univ im M.V. Lomonosov. Physics Faculty) 100 copies. Bibliography at end of text (11 titles)

(KL, 39-58, 106)

AUTHORS: Chuvilo, I. V., Shevchenko, V. G. SOV/56-34-3-9/55

TITLE: The Photo-Disintegration of Be^9 and C^{12} by a γ- Bremsstrahlung With a Maximum Energy of 44 MeV (Fotorasshchepleniye Be^9 i C^{12} tormoznym γ - izlucheniyem s maksimal'noy energiyey do 44 MeV)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 3, pp. 593-598 (USSR)

ABSTRACT: This work investigates the angular distributions and the energy distributions of the protons which form in the photodisintegration of Be^9 by a γ- bremsstrahlung with the maximum energy $E_{\gamma max}$ = 44 MeV and in the photodisintegration of C^{12} by a γ - bremsstrahlung with the maximum energies 30 and 44 MeV. The method of these measurements was described already in a previous work (reference 1). As target served a graphite plate with a thickness of 17 mg/cm^2 and a beryllium plate with a thickness of 15 mg/cm^2. The protons were registered in NIKFI Ya-2-emulsions with 400 and 500 μ thickness. First the results obtained for beryllium are illustrated in a diagram. The analysis of the angular distributions of the groups of photoprotons with different energies speaks

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The Photo-Disintegration of Be^9 and C^{12} by a γ- Bremsstrahlung With a Maximum Energy of 44 MeV

SOV/56-34-3-9/55

for the fact that not all the here obtained results can be explained from the aspect of the mechanism of the photoreactions in this interval of photo energies. The angular distribution of the proton group with the energies 4 - 6 MeV, which was computed according to the model of the direct interaction of the γ- quanta with the single nucleons in the nucleus, disagrees with the experimentally obtained angular distribution. Therefore the authors computed the angular distribution of the photoprotons in the transitions of various kinds according to the model of the resonance theory of the intermediary nucleus. A table gives the results of these computations for the transitions into the ground state 2^+ and into the first excited state 3^+ of the forming nucleus Li^8. In the experimentally ascertained angular distributions the maximum is at an angle of 50^o, i. e. the angular distributions have a high symmetry with regard to the direction 90^o with predominant forward flying off of the photoprotons in the direction of motion of the γ-quanta. The here obtained results speak for the existence of a two-nucleon mechanism of the absorption of the γ-quanta in Be^9 up to a proton energy of 6 - 9 MeV. Also the energy spectrum of the photoprotons which originate from Be is illustrated in a diagram. The analysis of the part of this spectrum corresponding to the high energies, also speaks in favour

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The Photo-Disintegration of Be^9 and C^{12} by a γ- Bremsstrahlung With a Maximum Energy of 44 MeV

SOV/56-34-3-9/55

of the quasideuteron model. The angular distributions of the protons, which are obtained from the photodisintegration of C^{12} by a bremsstrahlung with $E_{\gamma max}$ = 30 MeV and $E_{\gamma max}$ = 44 MeV, agree with each other. Further results are given and discussed. The analysis of the results on the photodisintegration of C^{12} does not make possible a unique choice as yet. But the totality of the experimental data on the photodisintegration of the nuclei Be^9 and C^{12} speaks in favour of the assertion that the photodisintegration of the light nuclei by the absorption of γ-quants in the domain of the extremely high resonance takes place with the formation of an intermediary nucleus. In the decay of the intermediary nucleus. In the decay of the intermediary nucleus the final nucleus mainly remains in the ground state. Already at energies of the magnitude 80 MeV the two-nucleon mechanism of the absorption of γ-quanta by the nuclei is predominant.

There are 7 figures, 1 table, and 4 references, 2 of which are Soviet.

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Physics Inst. im P.N. Lebedev, AS USSR

SOV/68-58-2-12/20

AUTHORS: Gruzdeva, N.A., Khokhlova, L.A. and Shevchenko, V.G.

TITLE: Determination of Naphthalene in Coke-oven Gas (Opredeleniye naftalina v koksovom gaze)

PERIODICAL: Koks i Khimiya, 1959, Nr 2, pp 43 - 48 (USSR)

ABSTRACT: Standard methods of determining naphthalene are criticised. The authors carried out some experimental work in order to develop a more accurate method for the determination of naphthalene in scrubbed coke-oven gas. The picrate method was taken as a basis and the influence of the following factors on the accuracy of determination was studied: method of purifying gas from accompanying naphthalene compounds and experimental conditions such as filtration of naphthalene picrate, titration of picric acid obtained from the decomposition of naphthalene picrate and increased velocity of gas during absorption of naphthalene. The experimental results are given in Tables 1-3. The possibility of obtaining more accurate results by the picrate method with the following modifications was established: a) filtering off of the naphthalene picrate obtained should be done using a crucible with a porous bottom (Nr 3) which considerably reduces losses of the precipitate (in the standard method, double filter paper

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is recommended); b) titration of the picric acid formed on the decomposition of naphthalene picrate should be done iodometrically; the neutralisation moment is determined on the basis of a sharp change from green to yellow colour; c) the absorption of naphthalene from gas can be done at velocities of about 100 litres/hour, which shortens the analysis from 10-12 hours to 3-4 hours; d) before the absorption gas should be purified from accompanying naphthalene compounds which are able to form complexes with aqueous solution of picric acid with 75% solution of sulphuric acid. There are 2 figures and 3 tables.

ASSOCIATION: VUKhIN

SHEVCHENKO, V.G

82605

S/056/60/039/01/17/029
B006/B063

24.6200

AUTHORS: Neudachin, V. G., Shevchenko, V. G., Yudin, N. P.

TITLE: Position of the Giant Resonance in the Dipole Absorption of γ-Quanta by Atomic Nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No.1 (7), pp. 108-111

TEXT: The shell theory has already been used by Wilkinson (Ref. 1) to calculate the dipole absorption of gamma quanta and to explain the width and area of giant resonance lines. It was, however, found that the theoretical giant resonance energy was about twice as high as the experimental energy. Attempts to avoid this difficulty by introducing an "effective mass" led to an increase in the spacing between neighboring single-particle levels (~ 14 Mev), whereas the value of 6-7 Mev was experimentally confirmed. In the present article the authors show that for nuclei with $A < 70$ a consideration of the residual pair interactions in the calculation of giant resonance according to the shell theory yields values which agree with experiments, without the necessity of introducing an "effective mass".

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Position of the Giant Resonance in the Dipole Absorption of γ-Quanta by Atomic Nuclei

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These calculations were made by the authors for Ca^{40} and V^{51} for which there is sufficient spectroscopic material available. The calculations are described in detail for the E1-absorption of a γ-quantum by V^{51}, such as the transition (1): $(\nu f_{7/2})^8(\pi f_{7/2})^3 \rightarrow (\nu f_{7/2})^8(\nu d_{3/2}^{-1})(\nu f_{5/2})(\pi f_{7/2})^3$. The experimental data necessary for this purpose as well as their sources are given. The energy of transition (1) was estimated to be 19 + 20 Mev. Formulas for the absorption cross section are given for a) transitions from incompletely filled shells and b) transitions from filled shells. The results (E1-absorption curves) obtained for V^{51} and Ca^{40} are shown in the first diagram; the other three diagrams contain the curves obtained for Ni^{58}, Cu^{63}, and Cu^{65} as compared to the experimental curves determined in the papers of Refs. 13 and 15. Satisfactory agreement is found also in this case. For the three last-mentioned isotopes, however, the experimental material available is comparatively poor, so that the results are not very exact. Finally, the authors thank V. V. Balashov and Yu. F. Smirnov for their helpful advice, as well as

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Position of the Giant Resonance in the Dipole Absorption of γ-Quanta by Atomic Nuclei

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Yu. M. Shirokov for his discussions. There are 1 figure and 15 references: 3 Soviet, 8 US, 2 Canadian, 1 British, and 1 Dutch.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta
(Institute of Nuclear Physics of Moscow State University)

SUBMITTED: January 28, 1960 (initially) and March 11, 1960 (after revision)

Card 3/3

SHEVCHENKO, V.G.; YUR'YEV, B.A.

Excited states of Li^7 involving energies up to 9 Mev. Izv. AN SSSR. Ser. fiz. 25 no.9:1146-1148 '61. (MIRA 14:8)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(Lithium) (Nuclear reactions)

SHEVCHENKO, V.G.; YUR'YEV, B.A.

Photodisintegration of Li^7 by gamma-bremsstrahlung at a maximum energy of 9.5 Mev. Izv.AN SSSR.Ser.fiz. 25 no.10: 1269-1274 O '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
(Lithium—Decay) (Bremsstrahlung)

26696
S/056/61/041/005/011/038
B109/B102

24.6210

AUTHORS: Shevchenko, V. G., Yur'yev, B. A.

TITLE: Photoprotons from Pr^{141}

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 5(11), 1961, 1421 - 1426

X

TEXT: The angular and energy distributions and the photoproton yields from Pr^{141} have been measured for the maximum bremsstrahlung energies of 22.5 and 33.5 Mev. The experiments were carried out at the betatron of the NIIYaF MGU ($E_{\gamma max}$ = 35 Mev). Experimental arrangement (Fig. 1): The gamma quanta from the betatron target 1 passed through monitor 2, the lead collimator 3 and through the magnetic field 4, and entered the vacuum chamber 6. In this chamber was a metallic Pr foil which was tilted from the gamma beam by 30°. The emerging photons are recorded photographically using NIKFI plates with T-3 (T-3) 400μ emulsion and Я-2 (Ya-2) emulsion as well as Ilford C-2 plates. An auxiliary magnetic field kept the electrons leaving the target from striking the photographic plates. Results

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Photoprotons from Pr^{141}

of the measurements: Figs. 2 and 3 show the energy distributions of the protons from Pr^{141} photo disintegrations at $E_{\gamma max}$ = 22.5 and 33.5 Mev. The curves 1 and 2 correspond to the calculated spectrum of evaporated protons and of protons from direct photoeffect, respectively. Background was taken into account; generally, it was ~5%, but reached ~20% at 30°. The angular distribution may be described by the empirical expression $a + b \sin^2\theta(1 + p \cos\theta)^2$ (1). The values of a, b, c are given in Table 1. As an example, Fig. 5 shows the angular distribution in the energy interval of from 7.25 to 11.25 Mev (1 - $E_{\gamma max}$ = 33.5 Mev, 2 - $E_{\gamma max}$ = 22.5 Mev). Conclusions: (1) The maximum of the photoproton production cross section corresponds to gamma energies above 22 Mev. (2) The gamma absorption in this range has quadrupole character chiefly. This follows from the expression (1) and from Table 1. (3) The principal peak of the spectrum for $E_{\gamma max}$ = 22.5 Mev corresponds to the transitions $1g_{7/2} \rightarrow 1h_{9/2}$ and $1g_{7/2} \rightarrow 2f_{5/2}$. The peak of the 33.5-Mev spectrum corresponds to dipole transitions as well as to quadrupole transitions with chiefly

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Photoprotons from Pr^{141}

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$^{1}g_{7/2} \longrightarrow {}^{1}i_{11/2}$ and $^{2}d_{5/2} \longrightarrow {}^{2}g_{9/2}$. V. V. Balashov and V. G. Neudachin are thanked for discussions, S. Ovchinnikov for assistance. There are 6 figures, 2 tables, and 10 references: 4 Soviet and 6 non-Soviet. The four most recent references to English-language publications read as follows: M. E. Toms, W. E. Stephens. Phys. Rev., 92, 362, 1953; M. E. Toms, W. E. Stephens. Phys. Rev., 98, 626, 1955; W. K. Dawson. Canad. J. Phys., 34, 1480, 1956; J. H. Carver, W. Turchinetz. Proc. Phys. Soc., 73, 110, 1959.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University)

SUBMITTED: June 6, 1961

Card 3/6

S/056/61/041/006/039/054
B109/B102

AUTHORS: Balashov, V. V., Shevchenko, V. G., Yudin, N. P.

TITLE: Giant resonance in Pb^{208} photodisintegration

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6(12), 1961, 1929-1933

TEXT: The cross section for the dipole absorption of γ-quanta by Pb^{208} nuclei has been calculated by using the shell model. The application of the diagonal approximation (taking into account only the diagonal terms of the interaction of the particle with a "hole") to the photodisintegration of Pb^{208} does not bring about an essential change in comparison with the single-particle model of Wilkinson. In this approximation, the curve of dipole absorption is characterized by a wide maximum in the range of 5.5 - 8 Mev (experimental range 13.5 - 14 Mev). The energy levels $J = 1^-$ and the corresponding wave functions were calculated by diagonalizing the interaction matrix, using the single-particle states shown in Table 1. The position of the single-particle levels was determined in agreement

Giant resonance in Pb^{208} ...

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with experimental data on the neighboring nucleus and extrapolating calculations according to the single-particle model. Assuming δ-interaction between the nucleons $V_{12} = -g\left[(1-\alpha) + \alpha\vec{\sigma}_1\vec{\sigma}_2\right]\delta(\vec{r}_1 - \vec{r}_2)$ and an interaction amplitude of 1220 Mev, Φ^3 (see W. W. True, W. T. Prinkston, J. C. Carter, Bull. Am. Phys. Soc., 5, 243, 1960), the values given in Table 2 and Fig. 2 will be obtained for $\alpha = 0.135$. A relevant calculation with the Wigner force resulted in values which deviated considerably from experimental data. It is concluded that a consideration of the residual interaction in Pb^{208} leads to an isolated "dipole state" whose position corresponds to the experimental energy value of giant resonance. The occurrence of this state is caused by the high density of the single-particle dipole states in the nucleus under consideration. It is pointed out that high density of single-particle levels is not a sufficient condition for the occurrence of an isolated and strongly correlated dipole state (Brown-Bolsterli effect). It is assumed that the giant resonance of photodisintegration can be explained by the use of a shell model and by taking into account the mixing of configurations. The

Card 2/3

Giant resonance in Pb^{208}...

results of investigations of Pb^{208} are believed to be valid for any other nuclei. There are 3 figures, 2 tables, and 7 references: 1 Soviet and 6 non-Soviet. The four most recent references to English-language publications read as follows: G. Brown, M. Bolsterli. Phys. Rev. Lett., 3, 472, 1959; E. G. Fuller, E. Hayward. Intern. Conference on Nucl. Structure, 1960, Kingston, Ontario, Canada; J. M. Soper (to be published); G. E. Brown, L. Castillejo, J. A. Evans. Nucl.Phys., 22, 1, 1961; W. W. True, W. T. Prinkston, J. C. Carter. Bull. Am. Phys. Soc., 5, 243, 1960.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University)

SUBMITTED: July 12, 1961

Table 1. Energies of "zeroth approximation". Legend: (1) single-particle proton states; (2) single-particle neutron states.
Table 2. Legend: (1) σ_{total} mb. Mev.

Card 3/6

S/903/62/000/000/029/044
B102/B234

AUTHORS: Balashov, V. V., Shevchenko, V. G., Yudin, N. P.

TITLE: Consideration of residual interaction between the nucleons in a nucleus with the aim of interpreting photonuclear reactions in the region of giant resonance

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy Vtoroy Vsesoyuznoy konferentsii, iyul' 1960 g. Ed. by A. S. Davydov and others. Moscow, Izd-vo AN SSSR, 1962, 435-440

TEXT: The consequences of ignoring residual nucleon interaction in the Wilkinson model (Physica, 22, 1039, 1956) have already been investigated by Elliott and Flowers (Proc. Roy. Soc., A 242, 57, 1957) for the photodisintegration of O^{16}. Similar calculations were made by the present authors for the Ca^{40} nucleus in dipole approximation when the quanta excite only the states with $J = 1^-$ and $T = 1$. It can be shown that when residual nucleon interactions are taken into account the nuclear excitation energy becomes raised. This makes it possible to explain the position of the

giant resonance maximum without introducing the concept of an effective nucleon mass. The increase in level excitation energy is mainly determined by the diagonal part of residual interaction (2 - 3 Mev); the off-diagonal part due to displacement of configuration leads to a small additional increase of the dipole transition energy (1 - 1.5 Mev). The shift of states induced by residual interaction opens additional channels of decay of quasi-steady states formed on γ-quantum absorption. The great number of transitions thus arising in the spectra of low-energy nucleons have a statistical character. Hence taking account of residual interactions points to the microscopic nature of a decay via compound nucleus formation. The connection between the channels determined in shell-model calculations may serve as a basis for using a complex potential to interpret giant resonance. Residual interaction plays a particularly important role in the formation of energy spectra of photonuclear reaction products in the region of heavy nuclei where the proton excited levels decay mainly with neutron evaporation. There are 3 figures and 3 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics of MGU imeni M. V. Lomonosov)

S/903/62/000/000/034/044
B102/B234

AUTHORS: Neudachin, V. G., Shevchenko, V. G., Yudin, N. P.

TITLE: Mechanism of γ-quantum absorption on nuclear p-shells

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy Vtoroy Vsesoyuznoy konferentsii, iyul' 1960 g. Ed. by A. S. Davydov and others. Moscow, Izd-vo AN SSSR, 1962, 486-494

TEXT: The authors calculate the γ-quantum E1-absorption cross sections for Li^7, C^{12} and C^{13} nuclei and compare the results with those of experiments. First a detailed discussion is given of the excited states as to position, characteristics and transitions of these nuclei on the basis of the present literature. The calculations are based on simplifying assumptions: (1) Young's orbital part of the wave function of the initial state is considered a good quantum number (in the case of the nuclei investigated it corresponds to LS-coupling) and (2) the coupling between the s- and d-nucleons with the p-core is assumed to be weak. The E1-absorption mechanism and the energy dependence of its cross section is investigated for the transition of a 1p-nucleon to the states $2s_{1/2}$, $1d_{5/2}$, $1d_{3/2}$, and of the 1s nucleon into the

Card 1/2

Mechanism of γ-quantum absorption...

1p state. The σ(E)dE formula applied is taken from Racah (Phys. Rev., 63, 367, 1943). Numerical results are given for 5 transitions of Li^7, 4 of C^{12} and 7 of C^{13}. Besides the transition characteristics also the cross sections and the level positions are estimated. The results are particularly discussed for each case and furthermore a series of experimental problems to be solved in the future are enumerated. There are 1 figure and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki, MGU im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics, MGU imeni M. V. Lomonosov)

S/903/62/000/000/035/044
B102/B234

AUTHORS: Neudachin, V. G., Shevchenko, V. G., Yudin, N. P.

TITLE: On the nature of giant resonance of the (γ,p) reaction on lead and bismut

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy Vtoroy Vsesoyuznoy konferentsii, iyul' 1960 g. Ed. by A. S. Davydov and others. Moscow, Izd-vo AN SSSR, 1962, 495-497

TEXT: The facts responsible for presence and position of (γ,p) giant resonance with Pb and Bi is discussed on the basis of the present literature. It is shown that giant resonance at $E_\gamma \approx 22$ Mev with Bi and Pb is complex, i.e. it is due to the superposition of two maxima: the giant resonance of γ-quantum quadrupole absorption and of the dipole maximum of the (γ,p) reaction; for Pb the latter lies at energies greater by 8 Mev than the energy of the maximum of dipole absorption of γ-quanta. The arguments speaking in favor of this statement are discussed in detail. They are: Virtual equality of the quadrupole and dipole transition amplitudes in the proton angular distributions of Pb and Bi; virtual equality of the (γ,n) - (γ,p) peak

Card 1/2

distance for Pb and the distance of the single-particle proton levels whose orbital angular momenta differ by unity; the complexity of the proton excitation spectra in the case of γ-quantum quadrupole absorption; the Pb integral (γ,p) reaction cross section (60 mb·Mev) which is by 1 order of magnitude too small to satisfy the sum rule for quadrupole absorption; the causes of the increased shift of (γ,p) dipole maximum with respect to that of (γ,n) with increasing A. This is illustrated on comparing the E_γ, E_n, and E_p values for a series of transitions in Ca^{40} and Pb^{208}. There is 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics, MGU imeni M. V. Lomonosov)

38885

S/188/62/000/003/011/012
B104/B112

24.6600

AUTHORS: Shevchenko, V. G., Yur'yev, B. A.

TITLE: Photoprotons from tungsten

PERIODICAL: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 3, 1962, 90-92

TEXT: The angular distribution, energy distribution and yield of photoprotons from tungsten at maximum energies of the γ-brems spectrum of 22.5 and 33.5 Mev were studied. When low energy photoprotons (< 8.75 Mev) are formed, γ-quantum has dipole character. At higher energies quadrupole absorption increases, reaching up to 70%. The cross section of the (γ,p) reaction has its maximum at $E_\gamma > 22.5$ Mev; in which region quadrupole absorption predominates. There are 2 figures and 1 table.

ASSOCIATION: NIIYaF

SUBMITTED: January 19, 1962

Card 1/2

VENTKIN, M.TS.; SHEVCHENKO, V.G.; KALYMKOV, B.I.

Mechanization of the charging of Petrashevskii-system iron-smelting furnaces. Sbor.nauch.-tekh.inform.Azerb.inst.nauch.-tekh.inform. Ser.Mashinostroi.prom. no.4:51-54 '62.

(MIRA 18:8)

35558
S/056/62/042/003/009/049
B104/B102

24.6410

AUTHORS: Shevchenko, V. G., Yur'yev, B. A.

TITLE: Photoprotons from Rh, Pt, and Pb

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 3, 1962, 707 - 712

TEXT: To study the role and the position of maximum quadrupole absorption of γ-quanta, the yields, the angular and energy distributions of the protons emitted in the photodisintegration of Rh, Pt, and Pb were determined from the bremsstrahlung spectra (maximum energies 22.5 and 33.5 Mev). Investigations were carried out on the 35-Mev betatron of the NIIYaF MGU. Foils of 25.1 mg/cm^2 (Rh), 41.4 mg/cm^2 (Pt), and 45.4 mg/cm^2 (Pb) thickness were used as targets. The foils were prepared from natural isotope mixtures, the impurities did not exceed 0.03% (Rh and Pt) and 0.01% (Pb). The maxima of the photoproton production cross sections were located at γ-quantum energies above 22 Mev. In this range the absorption of γ-quanta by heavy nuclei was of a quadrupole nature. With increasing A the quadrupole absorption maxima shifted in the direction of lower

Card 1/3

energies. For bismuth and lead, these maxima were at 22.5 and 24 Mev quantum energies, respectively. The photoproton angular distributions can be described by $a + b \sin^2\theta (1 + \cos\theta)^2$, where a and b depend on Z and on $E_{\gamma max}$. Such a distribution is characteristic of E1 + E2 absorption, $\sigma_{E2}/\sigma_{E1+E2}$ is between 0 and 75%. The following yields were measured:

	$E_{\gamma max}$, Mev	yield, protons/mole·roentgen
Rh	22.5	$1.3 \cdot 10^5$
	33.5	$2.8 \cdot 10^5$
Pt	33.5	$9.6 \cdot 10^4$
Pb	22.5	$2.9 \cdot 10^4$

T. A. Ivanova, S. M. Kulakova, and T. V. Yudina are thanked for working out measurement results, and the betatron team for assistance. There are 8 figures, 2 tables, and 12 references: 4 Soviet and 8 non-Soviet. ~~The four most recent references to English-language publications read as~~

Card 2/2 Inst: Inst Nuclear Physics, Moscow State Univ.

Submitted: Oct. '61

38851

S/056/62/042/006/002/047
B104/B102

AUTHORS: Shardanov, A. Kh., Shevchenko, V. G.

TITLE: An investigation of the $Li^7(\gamma,p)He^6$ reaction

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 6, 1962, 1438 - 1441

TEXT: The $Li^7(\gamma,p)He^6$ reaction was investigated using the betatron of the NIIYaF MGU with $E_{\gamma max}$ = 16.5 Mev. Cross section, energy distribution and angular distribution of the photoprotons were measured. The excited levels of the Li^7 nucleus could be determined. The peaks in the photoproton energy distribution (2.3, 3.2 and 3.9 Mev) correspond to the 12.5, 13.5 and 14.3 Mev excited levels of the Li^7 nucleus. The cross sections are: $\sigma_{12.5} = (1.2 \pm 0.5)\cdot10^{-27}$ cm^2; $\sigma_{13.5} = (0.5 \pm 0.25)\cdot10^{-28}$ cm^2; $\sigma_{14.3} = (0.4 \pm 0.2)\cdot10^{-28}$ cm^2. The spins of the levels (Table 1) are discussed. There are 3 figures and 2 tables.

Card 1/2 Inst: Inst Nuclear Physics, Moscow State U.

Submitted: Dec 1961.

40419
S/056/62/043/003/020/063
B102/B104

AUTHORS: Shevchenko, V. G., Yur'yev, B. A.

TITLE: Angular and energy distributions of photoprotons from heavy nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 3(9), 1962, 860-864

TEXT: The photoproton yields and energy distributions were measured with $E_{\gamma max}$ = 22.5 and 33.5 Mev for W, Pt and Pb of natural isotope composition. The targets were prepared as thin foils and exposed to γ-radiation from the 35-Mev betatron of the NIIYaF MGU. Experimental arrangement and method are described in ZhETF, 41, 1421, 1961 and 42, 707, 1962. The photoproton angular distributions can be approximated by $a + b \sin^2\theta(1+p\cos\theta)^2$ and the constants are tabulated for various E_p intervals. These distributions were asymmetric with respect to 90°, the maximum being shifted toward small angles. The asymmetry was found to increase with E_p as well as with $E_{\gamma max}$. The energy distributions are very similar in all cases: For both $E_{\gamma max}$

Card 1/2

S/056/62/043/005/006/058
B163/B186

AUTHORS: Sorokin, Yu. I., Shevchenko, V. G., and Yur'yev, B. A.

TITLE: Cross section for photoproton reactions in lead

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 5(11), 1962, 1600-1603

TEXT: In order to study the shape of the quadrupole giant resonance curve, the total yield curves for the (γ,p) reactions on Pb^{207} and Pb^{208}, and the (γ,pn) and (γ,d) reactions on Pb^{208} were measured by recording the induced β^+ activity. Similar measurements at γ energies up to 27 Mev have been made earlier by Cameron et al. (Phys. Rev. 83, 1264, 1951) who succeeded in discovering only the ascending branch of the curve. In this experiment, lead discs of 14 and 30 mm diameter were irradiated within a distance of 50 cm from the target of the 35 Mev NIIYaF MGU betatron. The maximum energy of the bremsstrahlung from the target was variied from 0.5 to 33.5 Mev. The irradiated disc specimens were arranged between two β-counters measuring the induced activity of

Card 1/2

SHEVCHENKO, V.G.; YUR'YEV, B.A.

Scintillation methods for studying (γ, P) reactions. Vest. Mosk. un. Ser. 3:Fiz., astron. 18 no.5:11-17 S-O '63. (MIRA 16:10)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

SHEVCHENKO, V.G.; YUDIN, N.P.; YUR'YEV, B.A.

Quadrupole excitations of atomic nuclei. Izv. AN SSSR. Ser. fiz. 27 no.10:1313-1318 O '63. (MIRA 16:10)

SHEVCHENKO V.G.

SHEVCHENKO, V.G.; YUR'YEV, B.A.; LEVKIN, B.P.

Excitation function of the (γ, p) reaction on tungsten. Zhur. eksp. i teor. fiz. 44 no.3:808-809 Mr '63. (MIRA 16:3)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.
(Nuclear reactions) (Tungsten)

ISHKHANOV, B.S.; KORNIYENKO, E.N.; SOROKIN, Yu.I.; SHEVCHENKO, V.G.; YUR'YEV, B.A.

Cross section of the $Rh^{103}(\gamma, p)$ reaction. Zhur. eksp. i teor. fiz. 45 no.2:38-42 Ag '63. (MIRA 16:9)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

(Nuclear reactions)

SHEVCHENKO, V.G.; YUDIN, N.P.; YUR'YEV, B.A.

Quadrupole resonance of atomic nuclei. Zhur. eksp. i teor. fiz. 45 no.2:180-184 Ag '63. (MIRA 16:9)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

(Nuclear shell theory)

SHARLAY, A. Kh.; SHEVCHENKO, V. G.; YURYEV, B. A.

"The Photodisintegration of Li^6 by Bremsstrahlung Gamma Rays with Maximum Energy 12.5 MeV."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

NII, YaF, MGU
1 ResInst Nuclear Physics, Moscow State Univ.

ISH[illegible], B. S.; KAPITONOV, I. M.; KORNIYENKO, E. I.; SHEVCHENKO, V. G.; YUR'YEV, B. A.

"Investigations of the Reaction $Ca^{40}(\gamma,p)$."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

NIIYaF, MGU (Sci Res Inst Nuclear Physics, Moscow State Univ)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549210013-5"

SHARDANOV, A.Kh.; SHEVCHENKO, V.G.; YUR'YEV, B.A.

Study of the $Li^6(\gamma,p)$ reaction. Izv. AN SSSR. Ser. fiz. 28 no.1:60-63 Ja '64. (MIRA 17:1)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

ISHKHANOV, B. S.; KAPITONOV, I. M.; YUR'YEV, B. A.; SHEVCHENKO, V. G.

"The giant resonance of the gamma quantum dipole absorption in Ca^{40}."

report submitted for Intl Conf on Low & Medium Energies Nuclear Physics, Paris, 2-8 Jul 64.

ACCESSION NR: AP4033640 S/0188/64/000/002/0085/0087

AUTHOR: Balamatov, N. N.; Ishkhanov, B. S.; Shevchenko, V. G.; Yur'yev, B. A.

TITLE: An apparatus for measurement of the cross sections and angular distributions of the products of photonuclear reactions

SOURCE: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 2, 1964, 85-87

TOPIC TAGS: physics, photonuclear reaction, betatron, bremsstrahlung, gamma radiation, gamma quantum

ABSTRACT: In order to compute the cross sections of photonuclear reactions with a sufficient degree of accuracy when working with bremsstrahlung gamma radiation of betatrons it is necessary that yield curves be measured with exceptionally high accuracy. Errors in experimental determinations are caused by the statistical error in determining the yields of nuclear reaction products, error in determination of the energy of electrons in the betatron, drift of the instrument determining the intensity of the flux of gamma quanta and the error associated with the instability of the recording instrument in time. Most of these errors have been eliminated or decreased by use of an apparatus already described in the literature

Card 1/3

ACCESSION NR: AP4033640

(O. V. Bogdankevich, Atomnaya energiya, 12, No. 3, 199, 1962). An apparatus of a similar type now has been constructed for simultaneous measurement of the yield of photoprotons at three angles. The descriptive text is accompanied by a block diagram of the apparatus; there are two synchronously operating units: a unit for regulating and stabilizing electron energy and a recording unit. The apparatus was checked by measurement of the yield of photoprotons from zirconium. The recording was for angles of 90°, 90°' and 150° relative to the beam of gamma quanta. The results are shown in Fig. 1 of the Enclosure. "The authors wish to thank O. V. Bogdankevich, I. M. Kapitonov, I. M. Piskarev and N. G. Vodyanov for valuable advice and assistance". Orig. art. has: 3 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki (Scientific Research Institute of Nuclear Physics)

SUBMITTED: 18Aug63 DATE ACQ: 30Apr64 ENCL: 01

SUB CODE: NP NO REF SOV: 004 OTHER: 002

Card 2/3

ACCESSION NR: AP4033640

ENCLOSURE: 01

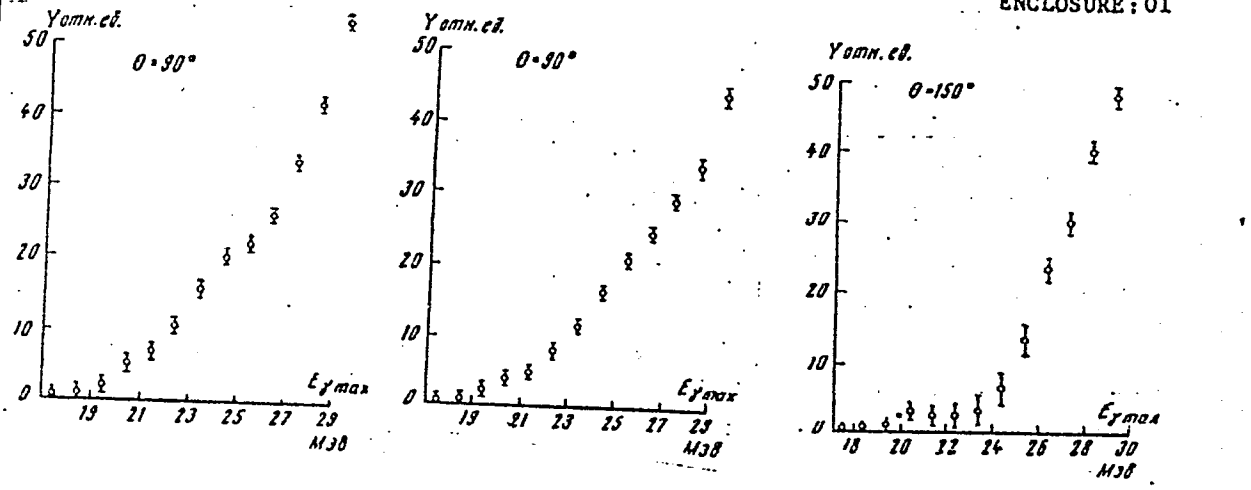


Fig. 1. Yield of photoprotons from the reaction, measured at angles 90°, 90°, and 150°.

отн. ед. = relative units МэВ = Mev

Card 3/3

ACCESSION NR: AP4031181 S/0056/64/046/004/1484/1486

AUTHOR: Ishkhanov, B. S.; Kapitonov, I. M.; Korniyenko, E. N.; Shevchenko, V. G.; Yur'yev, B. A.

TITLE: Photoprotons from calcium

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1484-1486

TOPIC TAGS: photoproton, angular distribution, energy distribution, photoproton yield curve, integrated cross section, shell model, sum rule

ABSTRACT: To eliminate some contradictions which still exist between the calculations of the photodisintegration of Ca^{40} according to the many-particle shell model and the experimental data, the authors measured the angular and energy distribution of photoprotons from Ca^{40} for a maximum γ-ray energy 22 MeV, and also obtained cross sections for the reactions $Ca^{40}(\gamma, p)$. The measurements were made on the 35 MeV betatron of NIIYaF MGU, the energy distributions being obtained with emulsions and the photoproton yield curves with scintillation spectrometers. The position of the peak in the cross section for the (γ, p) reaction agrees with the theoretical calculation Balashov, Shevchenko, and Yudin (Nucl. Phys. v. 27, 323, 1961), and the integrated cross section agrees with both the sum-rule calculations and

Card 1/4

ACCESSION NR: AP4031181

the shell-model calculations. The positions of the cross section peaks also agree with theory. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 24Sep63 DATE ACQ: 07May64 ENCL: 02

SUB CODE: NP NR REF SOV: 004 OTHER: 002

Card 2/4

GORYACHEV, B.I.; ISHKHANOV, B.S.; KAPITONOV, I.M.; SHEVCHENKO, V.G.; YUR'YEV, B.A.

Energy distribution of photoprotcns from Si^{28}. IAd. fiz. 1 no.6: 1005-1008 Je '65. (MIRA 18:6)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

ACCESSION NR: AP5005942 S/0048/65/029/002/0213/0215

AUTHOR: Dushkov, I.I.; Ishkhanov, B.S.; Kapitonov, I.M.; Shevchenko, V.G.; Yur'yev, B.A.

TITLE: Photoprotons from zirconium /Report, 14th Annual Conference on Nuclear Spectroscopy held in Tbilisi, 14-22 Feb 1964/

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v.29, no.2, 1965, 213-215

TOPIC TAGS: bremsstrahlung, gamma reaction, photonuclear reaction, proton, dipole photoabsorption, quadrupole photoabsorption, zirconium

ABSTRACT: The Zr(γ,p) reaction was investigated with 22, 25 and 34 MeV bremsstrahlung from the 35 MeV betatron of the Moscow State University. A 14.7 mg/cm^2 zirconium film of natural isotopic composition on an organic backing was employed as the target. The total photodisintegration cross section was found to have a peak at 21.5 MeV with a width of 4.5 MeV; this is in agreement with the results obtained for neighboring nuclei. The energy distribution of the photoprotons ejected by 25 MeV bremsstrahlung was compared with calculations for Zr^{90} based on the statistical model (R.M.Osokina, Int.Symp.on Direct Interaction and Nuclear Reaction Mech-

Card 1/2

L 33613-65

ACCESSION NR: AP5005942

anism.Padoue,1962). The agreement between theory and experiment was reasonably good for proton energies below about 7 MeV, but there was a considerable excess of high energy photoprotons. These are ascribed to direct processes and account for [illegible] number of photoprotons. The angular distribution of the photoprotons ejected by 25 MeV bremsstrahlung was moderately asymmetric and indicated an approximately 5% contribution from quadrupole absorption. For the 34 MeV bremsstrahlung the asymmetry, and, consequently, the quadrupole absorption contribution was much greater; this is in agreement with the findings of V.G.Shevchenko, [illegible] and B.A.Tulinov (Zhur.eksper.i teor.fiz.45,180,1968), who place the quadrupole absorption peak for Zr in the vicinity of 27 MeV. Orig.art.has: 6 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosuniversiteta im.M.V.Lomonosova (Scientific Research Institute for [illegible] Moscow State University)

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 004 OTHER: 004

Card 2/2

S/0048/65/029/002/0221/0224

B.V. Shuvchenko, V.G.

B.S.; Abr

D.A.

Report, 14th Annual Conference on

of the Ca^{40} ... reaction

... 22 Feb 1964

... AN SSSR. Izvestiya, Seriya ... v.29, no.2, 1965, 221-224

... bremsstrahlung, gamma reaction, photonuclear reaction, pri... calcium

... The authors have determined the energy and angular distributions of photo... Ca^{40} nuclei by 18, 22 and 25 MeV bresstrahlung from the 35 ...versity. The measurements were undertaken be... work that has been devoted to ... data. A 4.4 ...

ACC NR: AP6019636 (A,N) SOURCE CODE: UR/0048/66/030/002/0378/0382

AUTHOR: Ishkhanov,B.S.; Kapitonov, I.M.; Shevchenko, V.G.; Yur'yev, B.A. 47 47 B

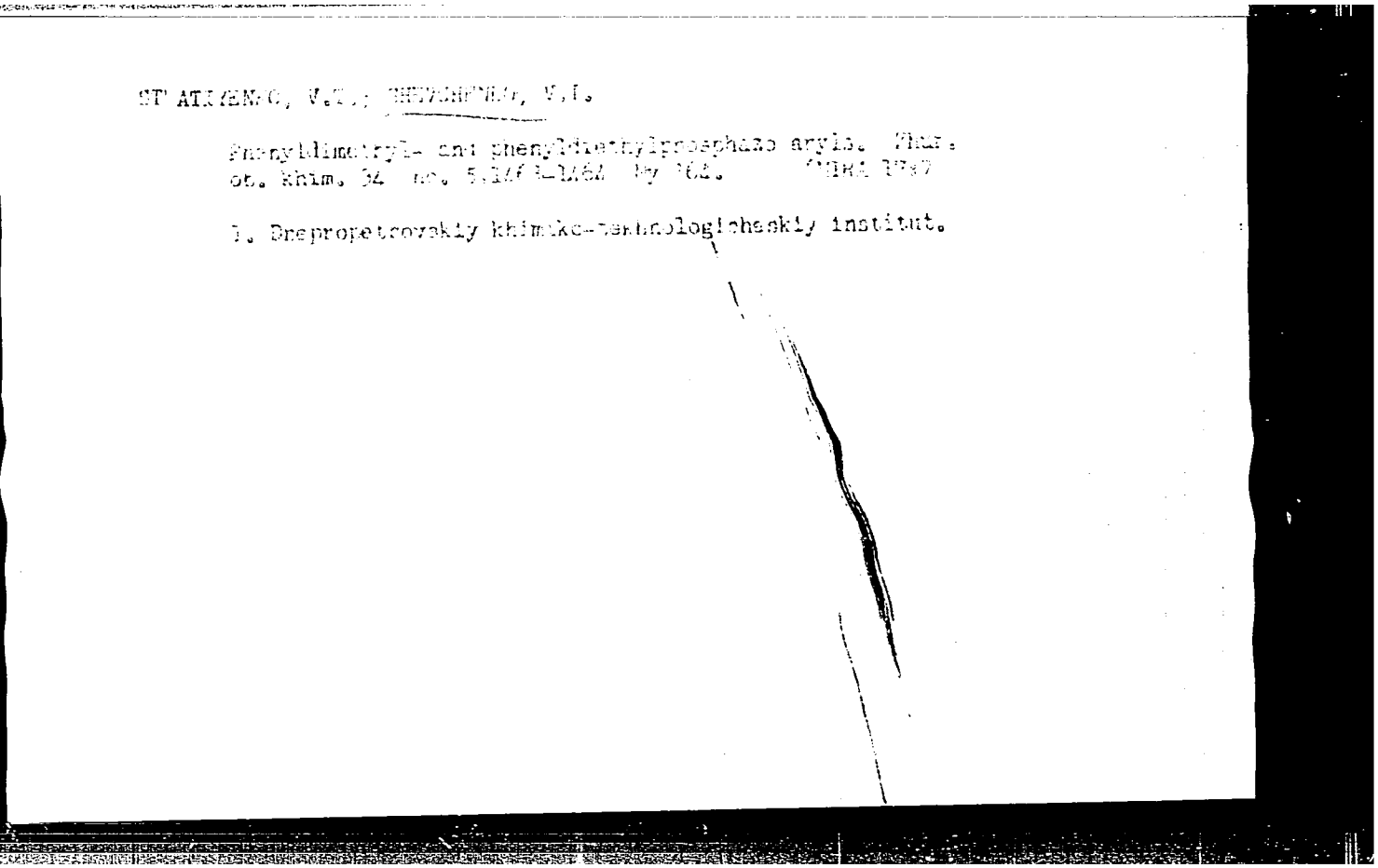
ORG: none

TITLE: Photoprotons from magnesium /Report, Fifteenth Annual Conference on Nuclear Spectroscopy and Nuclear Structure, held at Minsk, 25 January to 2 February 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya. v. 30, no. 2, 1966, 378-382

TOPIC TAGS: nuclear reaction, nuclear cross section, magnesium, gamma interaction, gamma ray absorption, proton, proton emission

ABSTRACT: The authors have measured the energy and angular distributions of protons ejected from a 9.2 mg/cm^2 target of 99.9% pure magnesium of the natural isotopic composition by 23 and 34 MeV bremsstrahlung from a 35 MeV betatron and have determined the total Mg^{24} (γ,p) cross section as a function of γ-ray energy in order to obtain data for comparison with theory on the giant dipole resonance in nuclei between C^{12} and O^{16}, for which "particle-hole" calculations based on the shell model are known to give a satisfactory description of the photodisintegration process, and Ca^{40}, for which similar calculations fail to account for a number of features of the process. The energy and angular distributions of the photoprotons were determined with 400 micron thick nuclear emulsions. The total cross section as a function of γ-ray energy was calculated by the method of Penfold and Leiss from yield curves measured with



ST'ATKIENKO, V.I.; [illegible], V.I.

Phenyldimethyl- and phenyldiethylphosphane oxyls. Zhur. ob. khim. 34 no. 5:1764-1766 My '64. (MIRA 17:7)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

GORELIK, M.G.; SHEVCHENKO, V.I.

Device for lifting mortar troughs. Rats. i izobr. predl. v stroi. no.91: 23-24 '54. (MIRA 8:8)

1. Otdel izobretatel'stva i ratsionalizatsii Ministerstva stroitel'stva. (Bricklaying)

SHEVCHENKO, V. I.

"Experimental investigation of facing materials of limestone-coquina from the Apsheron Peninsula." Min Construction Materials Industry Azerbaydzhan SSR. Azerbaydzhan Sci Res Inst of Construction Materials and Structures imeni S. A. Dadashev. Baku, 1956. (Dissertation for the Degree of Candidate in Technical Science).

SO: Knizhnaya letopis', No. 16, 1956

KONSTANTINOV, V.V., inzh.; VOROB'YEV, A.A., inzh.; NIKITIN, A.I., inzh.; BAN'KOVSKAYA, N.N., inzh.; SHEVCHENKO, V.I., inzh.

Using granulated slags in making high-strength concretes for prestressed floor panels. Bet. i zhel.-bet. no.6:234-235 Je '58. (MIRA 11:6)

(Kishinev--Concrete)

18(7) SOV/32-25-4-25/71

AUTHORS: Shevchenko, V. I., Alpatov, Ye. N.

TITLE: Separation of Nonmetallic Inclusions From the Surface of a Polished Section (Vydeleniye nemetallicheskikh vklyucheniy s poverkhnosti polirovannogo shlifa)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 4, pp 442-444 (USSR)

ABSTRACT: A method was developed which permits a selective separation of those nonmetallic inclusions which were examined metallographically on the polished section. It is based on the anodic dissolution of a small quantity of metal with the inclusions which are microscopically visible on the polished surface. The fine polishes were obtained by grinding the sample on the grinding stone, subsequent grinding with abrasive paper of the brand KZM (grain 500-320) and polishing with a chromium-oxide suspension (5-15 g Cr_2O_3 to 1 liter of water). The investigations were made on a horizontal metal microscope MIM-8. The viewed nonmetallic inclusion was marked under the microscope, the polished section was removed, the marked spot sticked up with a small piece of moistened filter paper, and the polished section placed into a melted paraffin-colophony mixture, taken out again, and the

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Separation of Nonmetallic Inclusions From the Surface of a Polished Section

paraffin-colophony layer was left to hardening. Then the filter-paper piece was removed, and the now unprotected, marked spot was slightly dissolved on a suitable device (Fig 1). For highly-alloyed and carbon steels, a neutral electrolyte not affecting the nonmetallic inclusions (6% aqueous solution of $FeSO_4 \cdot 7H_2O$ with an admixture of 7% NaCl and 0.2% citric acid) was used at a current density of 0.5-0.8 a/cm^2. Figures of silicate inclusions in cast (Fig 2) and rolled (Fig 3) highly-alloyed austenite steel are given. The inclusions separated in this way can be examined under the microscope, petrographically, microchemically, and X-ray structurally. There are 3 figures and 1 Soviet reference.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (Ukrainian Scientific Research Institute of Tubes)

SHEVCHENKO, V.I.; SUKHOVEYEVA, Ye.Ya.

Blood coagulation in workers in X-ray rooms. Sov.med. 24 no.1: 100-103 Ja '60. (MIRA 13:5)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - dotsent Z.S. Barkagan) Altayskogo meditsinskogo instituta (dir. - dotsent F.M. Kolomiytsev).
(BLOOD--COAGULATION)
(INDUSTRIAL MEDICINE)

SHEVCHENKO, V.I.

Characteristics of blood coagulation system disorders in chronic (occupational) X-ray exposure. Med. rad. 7 no.12: 49-55 D'62. (MIRA 16:10)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. -dotsent Z.S.Barkagan) Altayskogo meditsinskogo instituta.

GRIGOR'YEVA-BERENSHTEYN, A.G.; NIKUL'NIKOVA, N.S.; UGLOVA, T.V.
SHEVCHENKO, V.I.

Characteristics of polyvaccine. Report No.1: Reactivity of polyvaccine according to data of observations on a limited number of persons. Zhur. mikrobiol., epid. i immun. 33 no.11:47-52 N '62. (MIRA 17:1)

1. Iz Leningradskogo instituta vaktsin i syvorotok.

SHEVCHENKO, V.I.

On the local homeomorphism of three-dimensional space effected by the solution of a certain elliptic system. Dokl. AN SSSR 146 no.5: 1035-1038 O '62. (MIRA 15:10)

1. Novosibirskiy gosudarstvennyy universitet. Predstavleno akademikom I.N.Vekua.
(Differential equations) (Vector analysis)

SHEVCHENKO, V.I.; MURAV'YEV, V.V.

Effect of the fill factor coefficient of the transit channel on the efficiency of a traveling-wave tube. Izv. vys. ucheb. zav.; radiotekh. 7 no.2:191-199 Mr-Ap '64. (MIRA 17:8)

SHEVCHENKO, V. I.

Influence of nutritional loading (hen eggs) on blood coagulation indices in arteriosclerosis. Terap. arkh. 33 no.5:40-45 My '61. (MIRA 14:12)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - dotsent Z. S. Barkagan) Altayskogo meditsinskogo instituta.

(BLOOD--COAGULATION) (ARTERIOSCLEROSIS)
(EGGS--PHYSIOLOGICAL EFFECT)

SHEVCHENKO,V.I., inzhener

New method of textile scouring by means of live steam. Tekst.prom. 15 no.9:36-37 S '55. (MLRA 8:11)
(Textile finishing)

SHEVCHENKO, V.I.

The use of oxygen peroxide. Tekst.prom. 17 no.2:62-63 F '57.
(MLRA 10:2)

1. Zaveduyushchiy krasil'no-otdelochnoy fabrikoy kombinata imeni III Internatsionala.
(Bleaching agents)

SHEVCHENKO, V.I.

Experience in printing without a back grey. Tekst.prom. 21 no.11:63-65 N '61. (MIRA 14:11)

1. Zaveduyushchiy krasil'no-otdelochnoy fabrikoy kombinata imeni III Internatsionala Vladimirskogo sovnarkhoza.
(Textile printing)

[illegible], V.I.; STRATIYENKO, V.F.; PINCHUK, A.M.

Phenylbenzylethylphosphine sulfonyl aryls. Zhur. ob. khim. 35 no.8:1487-1488 Ag '65. (MIRA 18:8)

1. Institut organicheskoy khimii AN UkrSSR.

SHEVCHENKO, V.I.; PINCHUK, A.M.; KIRSANOV, A.V.

Mixed triarylphosphazo sulfonyl aryls. Zhur. ob. khim. 35 no.8:1488-1491 Ag '65. (MIRA 18:8)

1. Institut organicheskoy khimii AN UkrSSR.

SHEVCHENKO, V.I.; PINCHUK, A.M.

Mixed diarylmethoxy- and diarylaroxyphosphazo sulfonyl aryls.
Zhur. ob. khim. 35 no.8:1492-1496 Ag '65. (MIRA 18:8)

1. Institut organicheskoy khimii AN UkrSSR.

SHEVCHENKO, V.I.; KORNUTA, P.P.; KIRSANOV, A.V.

Phosphorylation of 1-cyanocarboxylic acids. Zhur. ob. khim. 35 no.9:1598-1602 S '65. (MIRA 18:10)

1. Institut organicheskoy khimii AN UkrSSR.

L 4242-66 EWT(1)/EWT(m)/ETC/EPF(n)-2/EWG(m)/EPA(w)-2/EWA(m)-2 LJP(c)
ACCESSION NR: AT5007973 GS/AT/JXT S/0000/64/000/000/1023/1029

AUTHOR: Berezin, A. K.; Berezina, G. P.; Bolotin, L. I.; Gorbatenko, M. F.; Yegorov, A. N.; Zagorodnov, O. G.; Kornilov, B. A.; Kurilko, V. I.; Lutsenko, Ye. I.; Laypkalo, Yu. N.; Pedenko, N. S.; Kharchenko, I. F.; Shapiro, V. D.; Shevchenko, V. I.; Faynberg, Ya. B.

TITLE: Acceleration of charged particles with the aid of longitudinal waves in plasma and plasma waveguides

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 1023-1029

TOPIC TAGS: high energy accelerator, electron beam, plasma accelerator, plasma waveguide

ABSTRACT: Plasma waveguides and noncompensated electron and ion beams can be utilized as accelerating systems in linear accelerators (Faynberg, Ya. B., Symposium CERN 1, 84 1956); *Atomnaya energiya* 6, 431 (1959)). In such systems, slow electromagnetic waves $v_\phi \leq c$ are propatated, which are necessary for particle acceleration. The waveguide properties of restrained plasma and noncompensated beams are displayed in the case of waves in the meter and centimeter range even for con-

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ACCESSION NR: AT5007973

paratively small plasma densities around 10^9 to 10^{13} cm^{-3}). Under these conditions the high-frequency energy losses during wave propagation, which are due to the collisions of plasma particles, are small. The density of electrons in metals (about 10^{23}) is many orders greater than is necessary for ensuring waveguide properties in the microwave range. This leads to great losses of high-frequency power during wave propagation in metallic conductors. For plasma densities around 10^9 to 10^{13} cm^{-3}, the energy losses during particle transist through the plasma, which are proportional to plasma density, are insignificant, from 10^{-5} to 10^{-6} ev/cm. This means that plasma waveguides are "transparent" for accelerated particles. Accordingly to the conditions of acceleration the particles are divided into individual bunches. Thus the loss of particles moving in the plasma can increase greatly because of the occurrence of coherent deceleration representing the inverse of the effect of coherent acceleration, which was established by V. I. Veksler (Symposium CERN 1, 80 (1956)). However, even for accelerated particle fluxes of the order of tens of amperes, these losses are all insignificant. Because waveguide properties are determined by the plasma, the metal surfaces can be remote from regions with large field strengths or eliminated altogether, which permits a significant increase in the permissible voltages of the accelerating fields and a substantial de-

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crease in the high-frequency energy losses. It is also important to concentrate the electromagnetic energy in the radial direction only in the regions where the accelerated particles are moving. Thus for a given field strength the electromagnetic energy flux decreases markedly. If the fluxes of accelerated particles are large, the waveguide properties necessary for acceleration can be ensured by the particles of the beam which are not entrapped in the acceleration process, through which particles the entrapped particles move. The beam itself which is injected into the accelerator operates under these conditions of an accelerating system. To clarify the possibilities of particle acceleration by means of electromagnetic waves excited by charged particle beams, and also to investigate the influence of beam instabilities upon the acceleration process, the Physicotechnical Institute, Academy of Sciences Ukrainian SSR conducted theoretical and experimental investigations on the interaction of charged particle beams with a plasma. These investigations were intended to lead to, not the design and construction of a definite accelerator model, but the physical processes occurring during the interaction under consideration, and in this way to a determination of the possibilities of plasma methods of acceleration which are being developed at this institute. The theory developed up to the present time of the interaction between beams and plasma has been essentially a linear theory. As a result of the work of V. D. Shapiro and V.

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I. Shevchenko at this institute for the case of beams of not very large density, a nonlinear theory has been created which permits one to trace the process of interaction of an initially nonmodulated beam and mono-energetic beam with a plasma from the initial stage to saturation. As is shown, a large part of the beam's energy of ordered motion (75% of its initial energy) is lost by the beam as a result of collective interactions with the plasma. Thus the energy expended upon excitation of oscillations amounts to 30%; upon increasing the thermal energy of the plasma, to 30%; and upon increasing the thermal energy of beam, to 15%. The experimental investigations of this interaction were carried out by I. F. Kharchenko and A. K. Berezin and their respective co-workers. The mentioned institute has also carried out further theoretical and experimental investigations on the problems of electromagnetic wave propagation in plasma waveguides excited by high-frequency wall sources. The experimental studies, by O. G. Zagorodnov, et al., showed that the results agree well with theory under conditions of insignificant nonlinear effects. Current experiments are concerned with highly-ionized plasmas with density 10^{11} to 10^{12}. Orig. art. has: 4 figures, 1 table.

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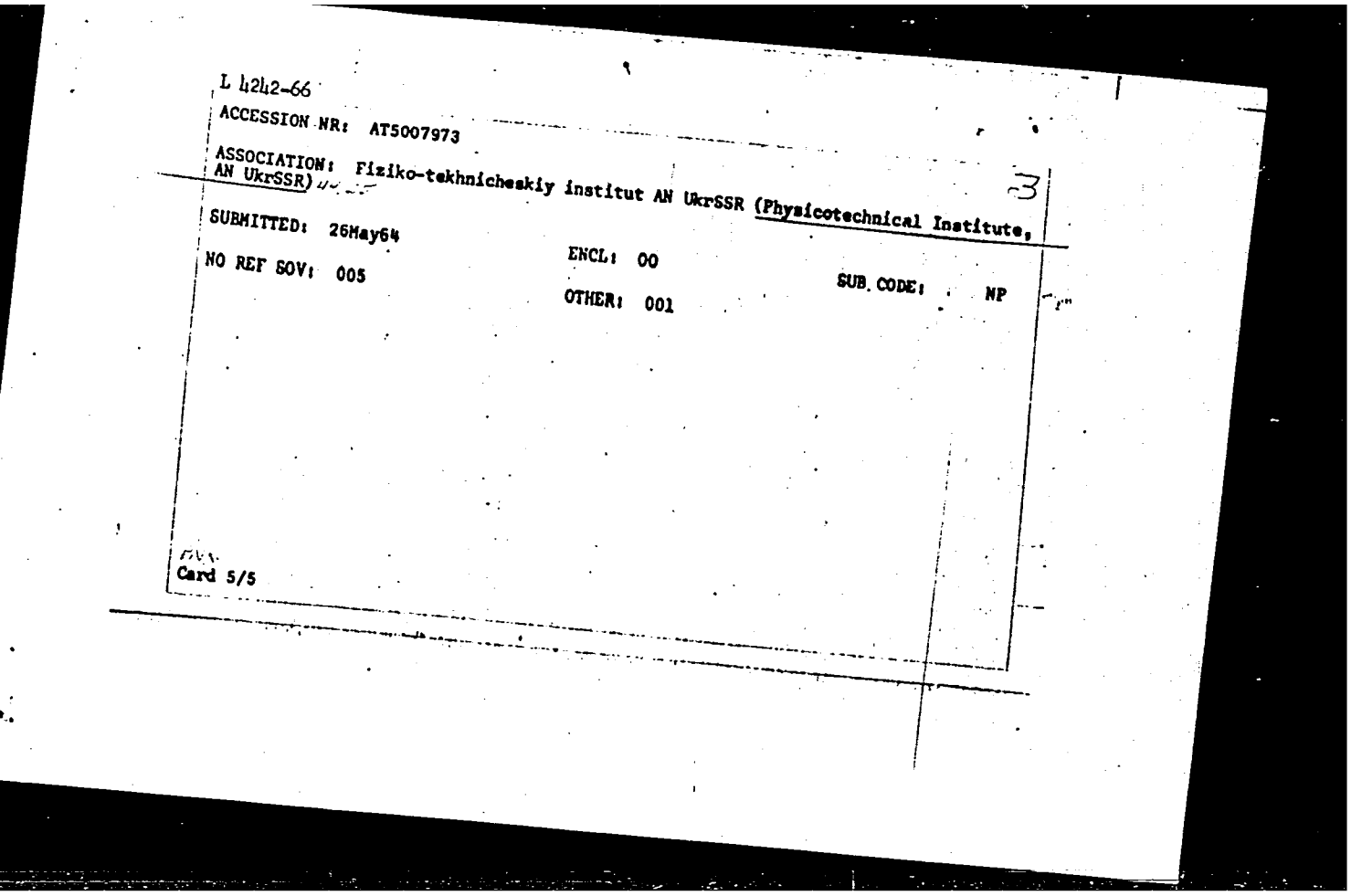

L 4242-66

ACCESSION NR: AT5007973

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute, AN UkrSSR)

SUBMITTED: 26May64

ENCL: 00

SUB CODE: NP

NO REF SOV: 005

OTHER: 001

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SHAPIRO, V.D.; SHEVCHENKO, V.I.

Induced scattering of Langmuir oscillations in a plasma placed in a high magnetic field. Ukr. fiz. zhur. 10 no.9:960-968 S '65.
(MIRA 18:9)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

ACC NR: AP6018750 SOURCE CODE: UR/0057/66/036/006/1151/1154

AUTHOR: Shapiro, V.D.; Shevchenko, V.I.

ORG: none

TITLE: On a mechanism for stabilization of beam instability

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 6, 1966, 1151-1154

TOPIC TAGS: plasma stability, plasma instability, plasma magnetic field, charged particle, electron beam

ABSTRACT: The authors discuss the stability of a plasma filament in a strong magnetic field in the presence of a low density axial electron beam whose diameter is equal to that of the plasma filament. The relevant dispersion equation is written, its roots are discussed, and the condition is derived for the stability of the plasma against low frequency oscillations. It is noted that when the stability condition is nearly but not quite satisfied (the case of "low supercriticality") there arises a nonuniform distribution of the energy density of electrostatic oscillations, which produces an additional force on the electrons that can tend to stabilize the plasma. The effect of the electrostatic oscillation energy density distribution nonuniformity on the plasma stability is discussed quantitatively and the conditions are found under which it can tend to stabilize the plasma. The authors thank Ya.B.Faynberg for discussing the results. Orig. art. has: 18 formulas.

SUB CODE: 20/ SUBM DATE: 20Dec65/ ORIG. REF: 002

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UDC: 533.951.8

3(5)

AUTHOR: Shevchenko, V. I.

SOV/20-127-1-51/65

TITLE: The Mosolovskiy Horizon of the Stalingrad Region (Mosolovskiy gorizont Stalingradskoy oblasti)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 1, pp 184-185 (USSR)

ABSTRACT: The unified scheme of the Paleozoic sediments assumed in 1951 is now in need of precise definitions, and partly also changes: so much material has been collected since then. One of the questions is the boundary between the Eifelian and Givetian stage. The Mosolovskiy horizon was assumed to belong to the Lower Givetian stage (Refs 3, 4). From the brachiopods and ostracods found, it follows that a mixed fauna complex of the Biyskiye layers and the Mosolovskiy horizon is characteristic of the contact zone of the Ural- and plateau types of the cross section (Ref 10). It was, however, also found by the author in cross sections of the northern and western parts of the Stalingrad region. From the results obtained it was possible to bring the Mosolovskiy horizon into correlation with the same sediments of the central parts of the Russian platform and with

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the Biyskiye strata of the western slope of the Ural. Since the latter are of Eifelian age, the Mosolovskiy horizon must be regarded as a component of Eifelian. There are 10 Soviet references.

ASSOCIATION: Tsentral'naya nauchno-issledovatel'skaya laboratoriya tresta "Stalingradneftegazrazvedka" (Central Scientific Research Laboratory of the Trust "Stalingradneftegazrazvedka")

PRESENTED: February 20, 1959, by D. V. Nalivkin, Academician

SUBMITTED: February 18, 1959

SOV/20-128-2-38/59

3(5)

AUTHORS: Karpov, P. A., Lyashenko, A. I., Nechayeva, M. A., Shevchenko, V. I.

TITLE: Brachiopods of the Ural Type in Devonian Deposits of Stalingrad Oblast'

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 359-361 (USSR)

ABSTRACT: The Middle and Upper Frasnian deposits of the above region including the Zhirnovskaya area contain a fauna characteristic of the corresponding deposits of the central oblasts. However, a brachiopod fauna very similar to that of the Samsonovskiy, Askynskiy and Barminskiy horizons of the Ural were found on the Linevskoye elevation (15 km eastwards) in the upper half of the Frasnian stage. Furthermore, foraminifers and ostracods were found in the brownish-grey, bituminous fine-grained limestones of borehole Nr 30 (between 2337 and 2342 m) and Nr 32 (2276-2281-2286-2295 m). The fauna was classified by A. I. Lyashenko and G. P. Batanova (Ref 1). According to B. P. Markovskiy, it belongs to the Mendymskaya strata. The latter are, however, of the same age as the Samsonovskiye strata ac-

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cording to the unified scheme. According to Lyashenko the latter are younger than the Mendymskiye ones. Almost all brachiopods found occur in the Samsonovskiye and in the lower part of the Askynskiye strata of the Ural (Refs 3,7). A similiarity of the fauna of the upper half of the Frasnian in Linevo and in the Ural proves a far-reaching connection of the waters of the Prikaspiyskaya (Caspian) depression and the Ural. It is assumed that conditions prevailed here and there that favored the existence of similar fauna complexes. An abrupt change of facies apparently occurred in the zone of the foundation fracture, in the section between Linevo and Zhirnovsk. A normal fauna characteristic of the central part of the Russian platform developed at that time. The change of sedimentation conditions was accompanied by a considerable increase of the thickness of the corresponding deposits in the region of Linevo. There are 10 Soviet references.

ASSOCIATION: Tsentral'naya nauchno-issledovatel'skaya laboratoriya Upravleniya neftyanoy i gazovoy promyshlennosti Stalingradskogo Soveta narodnogo khozyaystva (Central Scientific Research

SOV/20-128-2-38/59

Brachiopods of the Ural Type in Devonian Deposits of Stalingrad Oblast'

Laboratory of the Administration of the Petroleum- and Natural Gas Industry of the Stalingrad Council of National Economy)

PRESENTED: May 8, 1959, by D. V. Nalivkin, Academician

SUBMITTED: May 5, 1959

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SHEVCHENKO, V.I.

Boundary between the Devonian and Carboniferous in the right bank of the Volga Valley portion of Stalingrad Province. Geol. nefti i gaza 4 no.1:25-29 Ja '60. (MIRA 13:10)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya Upravleniya neftyanoy i gazovoy promyshlennosti Stalingradskogo sovnarkhoza.
(Stalingrad Province--Geology, Stratigraphic)

SHEVCHENKO, V.I.

Famennian deposits in Stalingrad Province. Dokl. AN SSSR 139 no.4: 956-958 Ag '61. (MIRA 14:7)

1. Nauchno-issledovatel'skiy institut neftyanoy i gazovoy promyshlennosti, g. Stalingrad. Predstavleno akademikom D.V. Nalivkinym.
(Stalingrad Province--Geology, Stratigraphic)

KARPOV, P.A.; NAZARENKO, A.M.; NECHAYEVA, M.A.; SHEVCHENKO, V.I.

Stratigraphy of Devonian sediments in the Don-Medveditsa swell and the Tersinskaya Depression. Trudy VNIING no.1: 17-38 '62. (MIRA 16:10)